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ABSTRACT

This script for a short radio broadcast on measurement standards and metric conversion begins by tracing the rise of the metric system in the international marketplace. Metric units are identified and briefly explained. Arguments for conversion to metric measures are presented. The history of the development and acceptance of the metric system is discussed. (DT)

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RICE BY WEIGHT, OTHER PRODUCE BY BULK AND SNARED IGUANAS AT SO MUCH PER ONE

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A Talk on Measurement Standards and on Metric Conversion

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Written in Belize City and Recorded for Broadcast at the Studios of Radio Belize

26 January 1977

by

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MAN HAS MEASURED SINCE THE DAWN OF HIS CIVILIZATIONS. I STOOD THIS PAST WEEK AT THE HISTORIC RUINS AT ALTUN HA, AND MARVELLED AT THE SO-EXACT SCIENCE OF ARCHITECT AND STONEMASON OF FORGOTTEN GENERATIONS. MAN HAS MEASURED IN MANY UNITS, FROM THE CARPENTER'S CUBIT AND THE WEIGHER'S TALENT OF THE BIBLE TO THE YARD AND POUND OF BRITISH TRADITION. MEASUREMENT OF VARIED KINDS GOES ON IN THE PRESENT-DAY MARKETPLACE, VERY MUCH AS IT DID OF OLD. IN THE BUSY MARKETPLACE OF BELIZE CITY, TO NO SURPRISE, I FIND MEAT AND RICE BEING SOLD BY WEIGHT, OTHER PRODUCE BY ITS BULK, AND A SNARED IGUANA (A SURELY UNIQUE COMMODITY) AT SO MUCH PER ONE. BUT IN THE RETAIL STORE, WHERE GOODS NOWADAYS COMMONLY ARE PREPACKAGED, STANDARDS OF MEASURING AND LABELLING MAY BE STRICT, PARTICULARLY WHEN NATIONAL AND INTERNATIONAL MARKETING IS INVOLVED. A MILK CARTON IN BELIZE CITY, SURPRISINGLY, IS THE BASIC UNITED STATES QUART. A PACKAGE OF BISCUITS OR OF BREAKFAST CEREAL, TYPICALLY, INDICATES A "NET WEIGHT" IN OUNCES OR POUNDS AND OUNCES; AND, ALTERNATELY OR ADDITIONALLY, A MASS IN GRAMS OR KILOGRAMS.

ONE OF THE MOST STRIKING DEVELOPMENTS OF THE INTERNATIONAL MARKETPLACE OF THE LAST TEN TO TWENTY YEARS HAS BEEN THE INCREASINGLY WIDESPREAD AND GENERAL USE OF METRIC

MEASURES. BEGINNING MOST NOTABLY WITH THE UNITED KINGDOM IN THE 1960S, INDIA SOMEWHAT EARLIER, AND THE REPUBLIC OF SOUTH AFRICA, AUSTRALIA, NEW ZEALAND, IRELAND, AND CANADA, IN THE YEARS THAT FOLLOWED, NATIONS, IN THEIR CONSIDERED SELF-INTEREST, HAVE COMMITTED THEIR ECONOMIES AND THEIR PEOPLES, TO CONVERSION TO INTERNATIONAL STANDARDS BASED UPON THE METRIC SYSTEM REVISION OF 1960, THE SO-CALLED "SYSTEME INTERNATIONAL." SOUTH AFRICA IS USING THIS SYSTEM IN ESSENTIALLY PURE FORM AT THIS TIME. EUROPEAN NATIONS ARE CONVERTING THEIR MORE TRADITIONAL "METRIC." NOW, WITH UNITED STATES COMMITMENT TO METRIC CONVERSION, REFLECTING RECENT LEGISLATION AND ACTION, THE WORLD SHOULD MOVE RAPIDLY TO A UNIVERSAL MEASUREMENT LANGUAGE. THE METRIC SYSTEM, ONCE PRIMARILY LIMITED IN ENGLISH COUNTRIES TO "PURE SCIENCE" LABORATORIES, PHOTOGRAPHY, AND MEDICAL AND PHARMACEUTICAL TERMS, HAS BEGUN INROADS INTO THE MARKETPLACE, THE SCHOOL, AND THE HOME. ALREADY THIS CONVERSION HAS GIVEN RISE TO LITRE SOFTDRINK BOTTLES IN BELIZE CITY, TO KILOMETRE-PER-HOUR SPEEDOMETERS ON SOME LOCAL CARS, AND TO A RATHER MIXED LABELLING, FREQUENTLY TECHNICALLY INCORRECT, ON PACKAGES ON GROCERY SHELVES. THE LONG-TERM TREND IS TO A NEW SIMPLICITY AND UNIVERSALITY: CLOTHING SIZES IN CENTIMETRES, MACHINE PARTS IN MILLIMETRES, BUILDING LOTS SO MANY METRES BY SO MANY METRES, DISTANCES BETWEEN TOWNS IN KILOMETRES . . . IN DUE COURSE. SUCH WORDS AS INCH AND FOOT, YARD AND FATHOM

AND MILE, WILL . . . LIKE THE FURLONG, THE LEAGUE, AND THE BIBLICAL CUBIT . . . BE OF PRIMARILY LITERARY AND HISTORICAL INTEREST. THE APOTHOCARIES' POUND (OF DRAMS AND SCRUPLES) OF THE OLDER PHARMACIST; THE TROY POUND OF THE PRECIOUS METALS MERCHANT; AND THE AVOIRDUPOIS POUND OF THE MARKETPLACE WILL YIELD TO THE KILOGRAM AND GRAM, A SINGLE AND UNIFORM STANDARD, THROUGH THE MILLION-GRAM METRIC TON. A LETTER MAY BE 20 GRAMS; A BIG AND HEAVY MAN, 100 KILOGRAMS; A NEWBORN BABY, 3 OR 4 KILOGRAMS. THE LITRE, A BIT SMALLER THAN THE IMPERIAL QUART BUT LARGER THAN THE AMERICAN, WILL REPLACE THE BUSHEL AND PECK, THE GALLON, AND THE QUART AND PINT, LIQUID AND SOLID. A 250 MILLILITRE MEASURING CUP AND A 5 MILLILITRE TEASPOON, LITTLE DIFFERING IN APPEARANCE FROM THEIR PRESENT COUNTERPARTS, ARE LIKELY FOR THE KITCHEN. LAND AREA IS TO BE GIVEN IN HECTARES RATHER THAN ACRES, 100 HECTARES BEING EQUIVALENT TO ONE SQUARE KILOMETRE. IF IT SOUNDS COMPLICATED, IT'S REALLY NOT. OLYMPIC ATHLETES, AND MANY OTHERS, RUN 100 METRES: THE SQUARE ON THIS DISTANCE IS THE HECTARE. A KILOMETRE, TO ME, IS A BRISK 10, 12 MINUTE WALK! SIGNIFICANTLY, AMPERE, VOLT, WATT, FAMILIAR AS ELECTRICAL TERMS, ALREADY ARE INTERNATIONAL METRIC. THE POWER UNIT, THE WATT (AND KILOWATT), WILL REPLACE HORSEPOWER IN YEARS TO COME. ONE POWER UNIT--THE WATT--WILL SUFFICE. THE CELSIUS TEMPERATURE SCALE (FORMERLY CALLED CENTIGRADE) IS IN SERVICE IN ALMOST EVERY COUNTRY TODAY, INCLUDING NEW ZEALAND,

AUSTRALIA, AND CANADA. IT SHOULD REPLACE THE FAHRENHEIT SCALE--IN WEATHER REPORTS, COOKING TEMPERATURES, AND ALL PRACTICAL USES. AN 86-DEGREE DAY BECOMES 30 . . . DEGREES CELSIUS. NORMAL BODY TEMPERATURE BECOMES 37. WATER BOILS AT 100.

THE CHIEF ARGUMENT FOR CONVERSION TO METRIC MEASURES IN COUNTRIES LIKE CANADA AND THE UNITED STATES HAS BEEN THAT THESE ARE INTERNATIONAL MEASURES . . . AND THAT TO AN EXPORTING NATION IT MAKES LITTLE SENSE TO MAINTAIN TWO INVENTORIES, ONE (METRIC) FOR EXPORT AND ONE FOR THE DOMESTIC MARKET. INDEED, IN THE UNITED STATES, AMONG THE STRONGEST PROPONENTS OF INTERNATIONAL MEASUREMENT STANDARDS HAVE BEEN THE SO-CALLED MULTINATIONAL COMPANIES, AND FOR JUST THIS REASON. SEEING THE TREND, THE AUTOMOTIVE INDUSTRY HAS BEEN LOOKING AHEAD, IN PREDOMINANTLY METRIC TERMS. HOWEVER, A SECOND REASON FOR "GOING METRIC" HAS TO BE ACKNOWLEDGED. AS EVOLVED, THE METRIC SYSTEM OF 1960, THE "SYSTEME INTERNATIONAL," IS AN INTRINSICALLY SUPERIOR SYSTEM, THE BEST THAT MAN HAS BEEN ABLE TO DEVISE. UNITS INTERRELATE WELL--THE PASCAL FOR PRESSURE, THE NEWTON FOR FORCE, THE JOULE FOR ENERGY, THE WATT FOR POWER. LARGER OR SMALLER UNITS MULTIPLY OR DIVIDE, BY TENS, THE NAMED UNIT. FROM THE METRE, UNIT OF LENGTH (SOMEWHAT MORE THAN A YARD, ABOUT TWICE THE BIBLICAL CUBIT), WE HAVE THE CENTIMETRE, ONE HUNDREDTH AS MUCH; THE MILLIMETRE, ONE THOUSANDTH AS MUCH; AND THE KILOMETRE, ONE THOUSAND TIMES AS

MUCH. RELATIONSHIPS, THEREFORE, ARE SIMPLER THAN THE 12S, 36S, AND 5280S WITH WHICH WE ARE ACCUSTOMED TO WORK. BELIZE HAS A "DECIMAL" MONETARY SYSTEM, AS INDEED BRITISH HONDURAS HAD FOR A VERY LONG TIME, A DOLLAR OF ONE HUNDRED CENTS. OTHER COUNTRIES, INCLUDING THE UNITED KINGDOM, HAVE SWITCHED TO SUCH A MONETARY SYSTEM IN RECENT YEARS. IT HAS BEEN RECOGNIZED TO BE THE EASIER AND BETTER SYSTEM. MEN THE WORLD OVER HAVE PREFERRED TO RECKON BY 5S, 10S, AND 20S--AT ALL TIMES--THE ORIENTAL, THE ROMAN, THE MAYAN, THE MODERN BUSINESSMAN. MAN HAS RECKONED ON HIS TEN FINGERS--AND THE ABACUS, THE CASH REGISTER, AND THE ELECTRONIC POCKET CALCULATOR ALL ARE EXTENSIONS OF THIS PRACTICE. MODERN MAN RECKONS BY TENS: A MONETARY SYSTEM BASED ON TENS, A MEASUREMENT SYSTEM BASED ON TENS, SIMPLY MAKE THE MOST SENSE. AND THIS IS WHAT THE METRIC SYSTEM ESSENTIALLY IS.

THE METRIC SYSTEM WAS DEVELOPED BY LEADING SCHOLARS OF POST-REVOLUTIONARY FRANCE--TO REPLACE THE DIVERSITY OF STANDARDS AND PRACTICES OF INDIVIDUAL TRADES AND LOCAL MARKETPLACES. IN 1875, THE METRIC SYSTEM CAME UNDER INTERNATIONAL JURISDICTION, WITH THE SIGNING OF THE "TREATY OF THE METRE." ITS FURTHER DEVELOPMENT--CHIEFLY THE REFINING OF ITS STANDARDS--HAS BEEN GUIDED BY "GENERAL CONFERENCES ON WEIGHTS AND MEASURES" SINCE THAT TIME. THE 1960 REVISION, WITH SOME FURTHER MODIFICATION, IS THE "INTERNATIONAL METRIC" TO WHICH NATIONS CURRENTLY ARE COMMIT-

TED. METRIC CONVERSION RAISES SIGNIFICANT QUESTIONS FOR EDUCATORS. CHILDREN IN SCHOOL TODAY ARE DESTINED TO REACH ADULTHOOD AND TO LIVE THEIR LIVES IN A PREDOMINANTLY METRIC WORLD. METRIC IS DECIMAL, AND DECIMALS ARE LIKELY TO RECEIVE GREATER, AND PROBABLY EARLIER, ATTENTION, QUITE POSSIBLY AT THE EXPENSE OF THE "COMMON FRACTION." EVEN NOW, THE CENTIMETRE SIDE OF RULERS IS GETTING FAR MORE USE THAN BEFORE--IN SCHOOL GEOMETRY "CONSTRUCTIONS" AND SCALE DIAGRAMS, FOR EXAMPLE. IN MANY NATIONS, HEALTH RECORDS NOW ARE BEING HEPT IN METRIC UNITS: HEIGHT, 180 CENTIMETRES; MASS, 85 KILOGRAMS. CHILDREN, AND PEOPLE GENERALLY, LEARN BEST WHEN THEY ARE WORKING--AND LIVING--SOLELY IN METRIC UNITS: IT IS AKIN TO LEARNING A NEW LANGUAGE. IN A NUMBER OF NATIONS, CERTAINLY INCLUDING BELIZE, THIS STAGE IS SOME YEARS AWAY.

INTERNATIONAL METRIC, SIGNIFICANTLY, INVOLVES A SYMBOLISM WHICH IS THE ESSENCE OF SIMPLICITY--AND THE SAME IN ALL LANGUAGES. METRE IS DENOTED BY A LOWER-CASE ROMAN "M," GRAM BY A "G," LITRE BY AN "L"--ALL LOWER CASE. THUS, FIVE-ZERO-ROMAN G (LOWER CASE), IN ANY LANGUAGE, IN THE CONTEXT OF ANY ALPHABET, DENOTES 50 GRAMS; ONE-K-G--ROMAN AND LOWER CASE, ONE KILOGRAM. ON PACKAGING IN RETAIL STORES AND EVEN IN OLDER SCHOOLBOOKS, ERRORS IN THIS INTERNATIONAL SYMBOLISM WILL BE FOUND TO ABOUND. CHANGE, UNDENIABLY, TAKES LEARNING AND TAKES TIME. YET THE CHANGE-OVER, IN TOTAL, SHOULD BE REMARKABLY INTERESTING . . . AND

A GREAT CHALLENGE TO THOSE WHO LEAD IN IT.

ON ANOTHER OCCASION, I'D LIKE TO SHARE WITH YOU WHAT HAS BEEN HAPPENING IN CANADA . . . AND HOW PEOPLE HAVE RESPONDED.

IN THE MEANWHILE, LOOK MORE CAREFULLY AT LABELLING ON PACKAGES AND BOTTLES. MORE OFTEN THAN YOU REALIZE IT, YOU MAY, EVEN NOW, HAVE A KILOGRAM OR A LITRE IN YOUR HANDS. TRUE, AS I WALK DOWN ALBERT STREET, I SEE CURTAIN MATERIAL PRICED BY THE YARD; I FIND GASOLINE SOLD BY THE AMERICAN GALLON. BUT THE CHANGE, AN INTERESTING AND SIGNIFICANT CHANGE IN THOUGHT PATTERNS AND IN WAYS OF RECKONING, IS COMING . . . AND MORE RAPIDLY THAN MANY WOULD THINK. IN BELIZE CITY, DON ALLEN SPEAKING AT RADIO BELIZE.